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ABSTRACT

Students work in pairs or small groups to identify and categorize various objects. One student is blindfolded and the other student chooses five objects for his/her partner to identify. The blindfolded student has to describe and try to identify the object based solely on touch. Both students then record their data, describing the objects first as human-made or natural, then living or non-living, and finally physical characteristics. This activity can be modified to challenge different age groups and can include brainstorming uses for the materials, not just classification. This activity uses a time frame of 30-60 minutes and goes well with a lesson on animal classification. (Author/SOE)

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Activity: **Touch and Discover**

GRADE LEVELS: PK-2

SUMMARY:

Students work in pairs or small groups to identify and categorize various objects. One student is blindfolded and the other student chooses five objects for their partner to identify. The blindfolded student has to describe and try to identify the object based solely on touch. Both students then record their data, describing the objects first as human-made or natural, then living or non-living, and finally physical characteristics. This activity can be modified to challenge different age groups. It can include brainstorming uses for the materials not just classification. This activity would go well with a lesson on animal classification.

LEVEL OF DIFFICULTY [1=Least Difficult : 5=Most Difficult]

4-Difficult

TIME REQUIRED

30-60 minutes

COST

None

STANDARDS:

1.1 Identify and describe characteristics of natural (e.g. wood, rocks, wool) and human –made materials (e.g. Styrofoam, plastic, fabric).

1.2 Identify and explain some possible uses and advantages for natural and human-made materials.

WHAT WILL THE STUDENTS LEARN?

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Build observation skills by using tactile perception to describe and distinguish objects.

How to categorize and sort objects in a logical fashion.

BACKGROUND INFORMATION:

RECOMMENDED RESOURCES:

MATERIALS:

Blindfolds or small containers (enough for half the class)

Make sure there is a large enough selection of objects so the children will have their own objects and each partner will identify different objects.

Rocks

Pinecones

Leaves

Seashells

Wood

Plastics

Pen/pencil

Paper

Styrofoam

Fabric

Leather

Wool

Cotton

Cork

Sponges (sea and artificial)

Fruits

Vegetables

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PREPARATION:

Large box filled with different objects from the materials list and whatever other materials the teacher wishes to use

Blindfolds or small containers (whichever the teacher wishes to use)

DIRECTIONS:

Prepare materials ahead of time. Put the various objects in a box or on a table out of view of the children. Make sure there is a large enough selection so that the children will be able to have their own objects and that each partner will identify different objects. Also prepare either enough blindfolds for each group or small boxes. The boxes can be used in place of blindfolds if desired. Small ice cream containers or tissue boxes can be used for the children to put their hands in to feel the objects.

Discuss with the children ahead of time different methods for grouping objects. Also discuss the difference between natural and human made, and living and non-living.

Have students break up in groups (ideally two to a group), and get their blindfolds.

Begin the activity:

1. Blindfold partner A. Partner B go to the table and choose five objects.
2. Without letting partner A see what you have chosen categorize the objects using the worksheet.
3. Partner A holds each object one at a time, examining it thoroughly with their hands. Describe the object to partner B.
4. Partner B records the data on the worksheet.

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5. After all five objects have been described by partner A, repeat the activity, this time let partner B be blindfolded, and partner A chose the objects to be identified.
6. Once both partners have had a chance to identify objects using only touch, explore how the ten objects you have identified can be grouped. Think about how they are related to each other, and their different uses.

Ask the children to expand on this activity by bringing five objects from home. These objects should be grouped according to a characteristic that they share. (Note: Make sure that the children know not to bring in anything that may be sharp or dangerous.)

Extensions:

Have students describe an object to the class.

This can help not only the student in developing their language and descriptive skills, but also help all the students with listening and visualization skills.

A matching game can be developed, where the child has to match what they feel with an object from a group of objects that they can see.

Discussion:

How did each group categorize the different objects?

Is there only one right way to group the objects?

Which ways are better? What are the best characteristics to use when grouping objects?

How easy/hard was it to identify and describe objects using only touch? Why?

Why is it good to practice using different observation skills?

Notes:

The more experienced the children are the more challenging you can make the activity. The children can pick out five similar objects for their partners to identify, or pick out five objects that they grouped in a certain way and have their

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partners identify the object and also identify how their partner grouped the objects.

INVESTIGATING QUESTIONS:

How can different objects be categorized and described using only your sense of touch?

Why is it important to be able to categorize different objects? How do engineers use information like this to help them?

REFERENCES:

Academy Curricular Exchange Columbia Education Center Science. [Online]. July 17, 2001. http://ofcn.org/cyber.serv/academy/ace/sci/ceecsci/ceecsci153.html

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SAMPLE RUBRIC:

As the children develop their skills they should use more descriptive words and more sophisticated methods of sorting. Beginners should be expected to sort according to shape and color, while the more advanced student should be able to sort according to uses and material. Simple, easily distinguishable objects should be used to start, with an increase in difficulty and similarity of objects for more proficient students. The basic ideas that should be obtained from this activity are that objects have certain characteristics that allow them to be grouped with similar object and that grouping can help you to understand and use these objects.

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TOUCH AND DISCOVER WORKSHEET

Category	Partner		Partner	
	A	B	A	B
Object				
Size (large/medium/small)				
Shape				
Texture				
Use				
Other:				

Category	Partner		Partner	
	A	B	A	B
Object				
Size (large/medium/small)				
Shape				
Texture				
Use				
Other:				

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PreK-12 ENGINEERING

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Activity Evaluation Form

Activity Name: _____

Grade Level the Activity was implemented at:_____

Was this Activity effective at this grade level (if so, why, and if not, why not)?

What were the Activity's strong points?

What were its weak points?

Was the suggested Time Required sufficient (if not, which aspects of the Activity took shorter or longer than expected)?

Was the supposed Cost accurate (if not, what were some factors that contributed to either lower or higher costs)?

Do you think that the Activity sufficiently represented the listed MA Framework Standards (if not, do you have suggestions that might improve the Activity's relevance)?

Was the suggested Preparation sufficient in raising the students' initial familiarity with the Activity's topic (if not, do you have suggestions of steps that might be added here)?

If there were any attached Rubrics or Worksheets, were they effective (if not, do you have suggestions for their improvement)?

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Title: PreK-12 Engineering Activities

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2) Invent a Backscratcher from Everyday Materials, Grades PreK-2
http://www.prek-12engineering.org/data/d28/Backscratcher.pdf

3) Compare Human-Made Objects with Natural Objects, Grades PreK-5
http://www.prek-12engineering.org/data/d34/HumanvsNatural.pdf

4) Do Different Colors Absorb Heat Better?, Grades PreK-2
http://www.prek-12engineering.org/data/d37/Absorbheat.pdf

5) Which Roof is Tops?, Grades PreK-2
http://www.prek-12engineering.org/data/d44/RoofTops.pdf

6) Make Your Own Recycled Paper, Grades PreK-2
http://www.prek-12engineering.org/data/d56/Recycle.pdf

7) Build an Approximate Scale Model of an Object Using LEGOs, Grades 3-5
http://www.prek-12engineering.org/data/d3/LegoScaleModel.pdf

8) Design Weather Instruments using Lego Sensors, Grades 3-5
http://www.prek-12engineering.org/data/d4/LegoWeather.pdf

9) Space Shelter, Grades 3-5
http://www.prek-12engineering.org/data/d5/SpaceShelter.pdf

10) Build a Bird House, Grades 3-5
http://www.prek-12engineering.org/data/d6/BirdHouse.pdf

11) Ball Bounce Experiment, Grades 3-5
http://www.prek-12engineering.org/data/d6/BallBounce.pdf

12) Make an Alarm!, Grades 3-5
http://www.prek-12engineering.org/data/d11/MakeAlarm.pdf

13) Design Packing to Safely Mail Raw Spaghetti, Grades 3-5
http://www.prek-12engineering.org/data/d17/MailSpaghetti.pdf

14) Disassemble a Click Pen, Grades 3-5
http://www.prek-12engineering.org/data/d33/clickPen.pdf

15) Construct And Test Roofs for Different Climates, Grades 3-5
http://www.prek-12engineering.org/data/d35/ClimateRoof.pdf

16) Compare Fabric Materials, Grades 3-5
http://www.prek-12engineering.org/data/d36/Fabric.pdf

17) A House is a House for Me, Grades 3-5
http://www.prek-12engineering.org/data/d52/House.pdf

18) Water Filtration, Grades 3-5
http://www.prek-12engineering.org/data/d53/Water Filtration.pdf

19) What is the Best Insulator: Air, Styrofoam, Foil, or Cotton?, Grades 3-5
http://www.prek-12engineering.org/data/d54/BestInsulator.pdf

20) Design a Recycling Game!, Grades 3-5
http://www.prek-12engineering.org/data/d55/Recycling.pdf

21) Tower Investigation and the Egg, Grades 6-8
http://www.prek-12engineering.org/data/d7/TowerEgg.pdf

22) Wimpy Radar Antenna!, Grades 6-8
http://www.prek-12engineering.org/data/d10/WimpyAntenna.pdf

23) Portable Sundial, Grades 6-8
http://www.prek-12engineering.org/data/d30/PortableSundial.pdf

24) An Introduction To Loads Acting on Structures, Grades 6-8
http://www.prek-12engineering.org/data/d31/IntroLoads.pdf

25) Design Your Own Rube Goldberg Machine, Grades 6-8
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26) Building Tetrahedral Kites, Grades 6-8
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27) Do as the Romans: Construct an Aqueduct!, Grades 6-8
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29) Design a Parachute, Grades 6-8
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30) The Squeeze is On, Grades 6-8
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31) Stop The Stretching, Grades 6-8
http://www.prek-12engineering.org/data/d43/StopStretching.pdf

32) Speaker Project, Grades 9-10
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